GLOBALIZATION AND THE DYNAMICS OF INTERNATIONAL FISH TRADE

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ABSTRACT

Although the share of total fish supply which is traded internationally is fairly stable, the patterns of trade flows are in constant change. China and Viet Nam are increasingly emerging as processors and suppliers of value-added products to world markets, but also within the world's various regions new players are emerging and markets developing. On the supply side, the aquaculture sector is becoming a major factor in product innovation and price determination with it share of total supply for human consumption quickly approaching 50%. In this paper, the authors presents an overview of world supply and trade flows with a particular emphasis on the impact of globalisation on developing country producers and exporters. Finally, a reference is made to the multilateral and bilateral trade system within which the fisheries sector is operating.

OVERVIEW

2008 is the year aquaculture looks set to equalize capture fisheries in the contribution of fish for human consumption (excluding fisheries for fishmeal production). Aquaculture output has been growing for decades with its share reaching 49 percent in 2007 and with growth forecast also in 2008, the historic milestone of parity seems likely to be reached during the current year. Prices are moving upwards for most fish species and products, in particular for wild species from capture fisheries, whereas prices of farmed species show only moderate growth. This is the first time in decades that fish prices are increasing. However, weaker demand in key markets such as Japan and the United States and the impact of rising energy prices on production (mainly capture fisheries) and feed (aquaculture), leading to higher costs during the processing, transportation and distribution phases, are putting pressure on profit margins. With higher prices, aquaculture is able to respond by increasing supply although the situation remains mixed depending on species and product form.

World fish market at a glance

	2005	2006	2007 *estim.*	Change: 2007 over 2006
		million tonnes		*%*
WORLD BALANCE				
Production	**142.7**	**143.6**	**144.8**	**0.8**
Capture fisheries	94.2	92.0	91.8	-0.2
Aquaculture	48.5	51.7	53.0	2.6
Trade value (exports billion USD)	78.4	85.9	92.3	7.5
Trade volume (live weight)	55.9	53.5	55.0	2.7
Total utilization				
Food	107.1	110.4	111.1	0.6
Feed	24.3	20.9	20.8	-0.4
Other uses	11.3	12.3	12.9	4.5
SUPPLY AND DEMAND INDICATORS				
Per caput food consumption:				
Food fish *(kg/year)*	16.4	16.7	16.7	0
From capture fisheries *(kg/year)*	9.0	8.9	8.5	-4.3
From aquaculture *(kg/year)*	7.4	7.8	8.1	3.3

INTRODUCTION

The document contains a brief review of world fish production, exports and imports. It also includes a summary of the current trade situation of major fishery commodities and issues of relevance throughout the value-chain. The document also addresses some emerging issues perceived to be of importance for the various stakeholders in the value-chain for internationally traded fish and fishery products, in particular as they relate to producers, processors and exporters in developing countries.

PRODUCTION

Total world fish production, excluding aquatic plants (capture and aquaculture), showed new growth in the 2003-2006 period, increasing from 133 million tonnes in 2003 to 140 million tonnes in 2004, a further increase in 2005 to 143 million tonnes and to 144 million tonnes in 2006. Estimates for 2007 confirm long-term trends of small incremental increases in total supply to 145 million tonnes. China confirms its role as the principal producer, reporting 52 million tonnes in 2006, of which 34 million tonnes derive from aquaculture[1]. Overall, 80 percent of the world's production of fish and fishery products takes place in developing countries.

Compared with production figures a decade ago, the current supply represents an increase of more than 20 million tonnes. This additional supply is entirely due to increases in aquaculture production, which in 2006 reached 52 million tonnes (excluding aquatic plants) or 36 percent of total output. Estimates for 2007 show new growth in farmed production to 53 million tonnes. However, there is some concern that the rate in aquaculture production growth is slowing down, whereas supplies from capture fisheries seem to have reached a long-term state of stability, despite some single year variability mostly linked to South American catches.

Capture fisheries production rebounded in 2004 and 2005 from somewhat lower levels in 2003, reaching 95 and 94 million tonnes respectively. In 2006, it decreased to 92 million tonnes. Preliminary statistics for 2007 indicate slightly weaker catch levels, at around 91.8 million tonnes. This confirms, in essence, the stability of aggregate supplies from capture fisheries over the last 12 years with total annual catches oscillating within a band of 88 and 96 million tonnes.

As noted above, despite the continued growth in aquaculture output, the overall growth rate in total world fish production has decreased from the higher growth levels observed during previous decades. This has implications for utilization and average consumption.

CONSUMPTION

World per capita consumption of fish and fishery products has risen steadily over the past decades from an average of 11.5 kg during the 1970s, 12.8 kg in the 1980s to 14.8 kg in the 1990s. Consumption in the 21st century has continued to grow to an average of 16.4 kg per capita for the 2001-2003 period. Preliminary figures for 2006 and 2007 show new increases to 16.7 kg. For 2007 the contribution of aquaculture to the supply of fish and fishery products for human

[1] However, there is a possibility that the absolute level of China's capture fishery and aquaculture production, particularly its growth since the early 1990s, has been overestimated in the statistics.

consumption (excluding fish meal) is estimated to have reached 46 percent of the total and can be expected to reach 50 percent in 2008 or 2009.

A large share of the rise in fish production in the world relates to China, where domestic consumption of fish and fishery products per capita has risen from less than 5 kg in the 1970s to the present 26 kg. In the world as a whole, excluding China's domestic consumption, average world consumption per capita was 13.5 kg in the 1970s, rising to 14.3 kg in the 1980s, then falling to 13.5 kg in the 1990s. The average for the 2001-2003 period was a new increase to 14.0 kg per capita, which is still lower than the maximum levels registered in the 1980s. In essence, much of the increase in total production of fish in the world has not only taken place in China, but has also been consumed in China. For the rest of the world, consumption per capita has been remarkably stable, oscillating around 14 kg.

There are large regional differences in fish consumption per capita. As noted above, China's consumption has risen to 26 kg per capita, Asia excluding China, consumes at present 14.3 kg per capita (positive trend), Europe 19.9 kg (positive), and North and Central America 18.6 (positive). The regions of South America 8.7 (stable) and Africa 8 kg (stable) have, however, a below-average but stable consumption per capita. In many ways it is the region of Africa which gives major causes for concern, given the low levels of consumption and the strong growth in projected population. On the other hand, Africa has a significant potential in aquaculture. At present, this is hardly exploited at all, with the exception of the very encouraging development in Egypt and also in several Sub-Saharan African countries. Trade in farmed species from Africa is still limited.

TRADE

International trade in fish and fishery products continues to grow strongly, reflecting rising consumption in 2006 and 2007, not only in the European Union (EU) and the United States of America (USA), but in all other regions, including Asia, with the notable exception of Japan. The proportion of world fishery production traded internationally (live-weight equivalent) was 37 percent in 2006. Some weakening in demand was registered in late 2007 and early 2008, as turmoil from the financial sector started affecting consumer confidence in major import markets. This is expected to impact discretionary spending and sales of higher-value items in the short term. However, the long-term trend for fish trade is positive, with a rising share of both developed and developing country production entering international markets.

World exports of fish and fishery products grew by 9.5 percent in 2005 to US$78 billion and a further 9.4 percent in 2006 to US$86 billion. Developing countries confirm their fundamental importance as suppliers to world markets with close to 50 percent of all exports. Imports are mostly by developed countries, now responsible for 80 percent of the total import value of US$90 billion[2] (2006). In volume (live weight), their share is significantly less, 62 percent, reflecting the higher unit value of products imported by developed countries.

Net export revenues from fish exports earned by developing countries reached US$ 24.9 billion in 2006. For many developing nations, fish trade represents a significant source of foreign currency earnings, in addition to the sector's important role in income generation, employment and food security. For Low-Income Food-Deficit Countries (LIFDCs), net export revenues rose to US$ 12 billion in 2006. LIFDCs accounted for 22 percent of total exports in value terms.

In general, rising trade values and volumes for all commodities (except fish meal volumes) reflect the increasing globalization of the fisheries value chain, in which production and

[2] Import figures differ from export figures because the former include freight costs, whereas exports are reported at FOB values.

processing is being outsourced to Asia (e.g. China, Thailand and Viet Nam) and, to a lesser degree, Central and Eastern Europe (e.g. Poland and Baltic countries) and North Africa (Morocco). Outsourcing of processing takes place both on regional and global levels, depending on the product form, labour costs and transportation time. In general, labour cost differences play a much larger role than transportation issues. It is noteworthy that many species, such as salmon, tuna, catfish and tilapia, are increasingly traded in the processed form (fillets or loins). At the same time, the growth of international or global distribution channels through large retailers has furthered this development.

At the same time, the rising share of developing countries in total fish production can also be considered a form of outsourcing of production, at least for the part destined to enter international markets. Over the decade 1997-2006, the share of developed countries in total production fell from 28 percent in 1997 to just above 20 percent in 2006. To a large extent however, the rising share of developing countries also reflects the significant increase in aquaculture, which through economies of scale and improved technology, has reduced costs and prices and thereby expanded the market overall.

China has become the largest fish exporter at US$9 billion (2006) but its imports are also growing, reaching US$4.1 billion (2006). The increase in China's imports is partly a result of outsourcing, as Chinese processors import raw material from all major regions, including South and North America and Europe for re-processing and export. It also reflects China's growing domestic consumption of species not available from local sources. China's trade in 2007 (six months) shows strong growth in both exports and imports. China is likely to eventually overtake Spain as the world's third largest importing country after Japan and the United States.

The EU is by far the largest single market for imported fish and fishery products. This reflects both its growing domestic consumption but also the fact that the EU has increased to 27 member countries. The 2006 imports (EU-27) reached US$38 billion, up 14 percent from 2005, or 42 percent of total world imports. However, official statistics also include trade among EU partners. If intraregional trade is excluded, the EU imported US$20.7 billion worth of fish and fishery products from non-EU suppliers, an increase of 16 percent from 2005. This still makes the EU the largest market in the world, with about 23 percent of world imports. Partial figures for 2007 confirm the present upward trend of EU imports, with a three percent increase in value recorded in the January-July period.

Japan is the largest single import market for fish, but import volumes have been declining in recent years due to weaker domestic demand associated with a long-term shift towards reduced fish consumption. In 2006, imports, which are dominated by shrimp, tuna and salmon, showed a 3.2 percent decline from 2005 to below US$14 billion, and a 5.6 percent reduction in volume to 3.2 million tonnes (product weight). Import volumes in 2007 confirmed the downward trend, falling 8.5 percent to below 3 million tonnes for the first time, with a further drop in import value. In fact, the value of Japan's fish imports in 2007 was only slightly larger than that of the USA. Japan's imports of fish and fishery products also fell as a share of Japan's total imports, from 2.5 percent in 2006 to 2.2 percent in 2007.

The USA is the second largest single import market after Japan. With a growing population and a long-term positive trend in seafood consumption, imports reached US$13.3 billion in 2006 and US$13.6 billion in 2007. Imported quantities of edible fish products reached 2.50 million tonnes (product weight) in 2006, but fell slightly in 2007 to 2.46 million tonnes due to market weakness in the final months of the year. The largest US import item in value is shrimp followed by salmon, crab and tuna. Of note is the strong increase in tilapia imports in 2007 (volume +10 percent, value +16 percent) and crab (volume +8 percent, value +18 percent). However, shrimp imports fell back somewhat in 2007 to 557 000 tonnes (- 5.6 percent) and US$3.9 billion (-5.1 percent).

VALUE CHAIN DEVELOPMENTS

Some of the major issues concerning international trade in fishery products in the past biennium, which continue to impact international trade are:

- introduction of private standards for environmental and social purposes by international retailers;
- continuation of trade disputes related to shrimp and salmon exports;
- the growing concern of the general public and the retail sector about overexploitation of certain fish stocks;
- the uptake of eco-labels by major retailers;
- organic aquaculture and development of new standards in major markets;
- certification of aquaculture in general and of shrimp in particular;
- the multilateral trade negotiations in the WTO;
- expansion of regional trade areas, regional and bilateral trade agreements;
- the negotiations on Economic Partnership Agreements between the ACP group of countries and the EU;
- global warming and its impact on the fisheries sector;
- rising energy prices and the impact on fisheries;
- rising commodity prices in general and the impact on producers as well as on consumers; and
- perceived risks and benefits from fish consumption.

These issues impact stakeholders to a varying degree, depending on their position in the value-chain. However, the impact flows both ways through the value chain with the physical product moving forward towards the final consumer, and information about prices, volumes, market conditions, quality, standards, and consumer preferences flowing back through the value chain to the producer. This flow underlines the dynamic nature of the global fisheries industry and ensures that producers respond to what consumers actually demand. However, the actual impact on each stage depends on the contractual relationship and the relative strength of negotiation in relationship to suppliers and clients.

The perceived shift of power in the value chain towards the large international retail chains is frequently seen as matter of concern. The requirements made by the retail sector often make it difficult for small-scale producers in both developing and developed countries to enter these markets. In addition, the shift in negotiating power impacts margins within the chain and determines how benefits are allocated. This development forces industry to increase efficiency, frequently bypassing intermediate linkages in the chain. Industry is also redefining its role as a supplier of food demanded by consumers, rather than just being a supplier of fish. This development challenges industry to work towards more inter-sectoral cooperation, and small-scale producers to organize themselves into larger units.

Concurrently, the large retail chains, through innovations in logistics, supply management and sourcing, have been able to reduce costs. Competition at the retail level has translated these cost savings into lower prices. Retail chain expansion has also increased the availability of products to consumers, thereby stimulating overall consumption.

The fragmentation of fisheries producers continues to hamper their ability to respond proactively to emerging issues and challenges advocated by consumer groups, retailers, civil society through NGOs, and to regulatory initiatives by governments. A more proactive role by industry would improve the dialogue between industry, government, science and civil society and would allow industry to address the issue of fishery sustainability from an environmental and economic perspective, rather than only responding to external pressure.

Producers have seen escalating energy costs increase operating costs, especially in the energy-intensive capture fisheries of shrimp and tuna. These cost increases are often passed on to

the final product. Groundfish producers have suffered from reduced catch quotas and increased competition from freshwater species. Aquaculture producers are facing rising feed costs and, for some species, recurring problems related to disease. Shrimp farmers have seen production volumes outgrow demand. Exporters of farmed salmon, catfish and shrimp continue to face accusations of dumping in certain markets. Some of these disputes have reached the WTO dispute process although a final outcome has not been reached. Producers are also seeing a growing demand for certification and labelling for environmental and ecological reasons. Although such certification is voluntary and not required by any government, the marketing power yielded by many retail chains is so large that the issue has been raised by some countries in the WTO whether such private standards are to be considered technical barriers to trade, and therefore an issue to be considered by the WTO.

Processors have frequently become more integrated with producers, especially for groundfish where large processors in Asia, in part, rely on their own fleet of fishing vessels. In aquaculture, large producers of farmed salmon, catfish and shrimp set up advanced centralized processing plants to increase profitability through an improved product mix and better yields and to respond to evolving quality and safety requirements in importing countries.

Processors in developed countries have seen margins decrease as raw material is more frequently being sent to low-cost processing countries. In the European and North American markets, frozen products are processed in Asia. Smoked and marinated products in Europe, for which shelf-life and transportation time is important, are being processed in Central and Eastern Europe. Processors have, through improved processing technology, been able to achieve higher yields and a more profitable product-mix from the available raw material. Processors of traditional products, in particular of canned products, have been losing market shares to suppliers of fresh and frozen products as a result of long-term shifts in consumer preferences. Processors that operate without strong brands and without secure access to raw material continue to see margins under pressure.

The link between producers and processors in the exporting country and the wholesalers and retailers in the importing and consuming country, has frequently been served by intermediaries such as brokers and agents. Improved communication technology has facilitated contact between producers and end-buyers, thereby limiting the role of the intermediary. Dedicated product specialists able to develop new markets for producers and new suppliers for buyers will, however, always be needed, in particular for small and medium-sized companies.

Retailers are alert to shifts in consumer preferences and match these through the products offered. Retail chains attempt to anticipate what consumers expect in terms of quality, safety, product variety, price etc., and increasingly on sustainability. Many chains are taking steps to ensure that the fish and fishery products are sourced from sustainably harvested or farmed resources. Frequently this is done through ecolabels. Retailers are also increasingly using their own labels, also knows as private labels, for food products, including fish and fishery products.

Consumers are increasingly concerned about sustainability issues, especially overfishing. Global warming is also a growing concern, although there is no perceived link to fisheries in particular. Air transportation of food is increasingly questioned. Health and well-being are other factors influencing consumption decisions; this explains in part the rise of the organic food sector. Most consumers are alert to food safety, with consequences for demand if a particular species is linked to any heavy metal, toxin etc. The perceived benefit of fish consumption remains strong in most consumers' minds. Price considerations have always been important for most consumer segments, and especially now in the USA, as consumer confidence is decreasing.

Over time, long-term changes in demand and supply flow through the value-chain from one link to the other. In the short term however, producers and processors may be forced to operate at a loss, as they are not always able to recover higher operating costs through higher product prices. This is in particular a problem in the aquaculture industry because of the time-lag

between production decisions and harvesting. Over time, new financial instruments, including forward markets and hedging mechanisms, can be expected to evolve also in this sector.

MAIN COMMODITIES

Shrimp continues to be the largest single commodity in value terms, accounting for 17 percent of the total value of internationally-traded fishery products (2006). Despite growing export volumes, its share has been declining, with average prices on a downward trend. The year 2007 registered weaker imports in both the US and Japanese markets, whereas the EU held up well. Farmed shrimp production volumes continued to grow strongly, reaching 2.7 million tonnes in 2005. This is more than double the farmed production level of 2000, but still less than total supplies from shrimp capture fisheries, which are fairly stable at around 3.5 million tonnes. With prices and margins under pressure, many producers of farmed shrimp are now looking into diversification and value-addition strategies in order to counter the price weakness, including cut-backs in output in order to stabilize prices.

The USA confirmed its role as the largest shrimp importing country, with steadily increasing volumes in 2005-2006 and with an estimated 90 percent of domestic shrimp consumption covered by imports. Falling consumer confidence in late 2007 resulted in a decrease in US shrimp imports for the year. Japan's shrimp imports fell further in 2007, in both volume and value. The EU is the largest import market for shrimp with overall demand still on the rise. Many exporting countries have now shifted their attention from the US market and the weak dollar, instead targeting Europe, with falling prices in the European market as a consequence.

Groundfish represented 10 percent of total fish exports (value) in 2006, with the market characterized by a high degree of substitution between the different groundfish species. Products processed in China and Viet Nam continue to influence world trade in this commodity. Increasingly, the market for fillets is being supplied by freshwater species such as tilapia, catfish and Nile perch, of which the first two are farmed with volumes exceeding two and one million tonnes per year respectively. Tilapia has found a ready market in the USA, whereas catfish imports are growing quickly in the EU, USA and Russia. The recent launch of farmed cod in European fresh markets, albeit of yet limited quantities, and of cobia in Asia and Central America, are other examples of the growing role and impact of aquaculture production in world groundfish supplies. Despite smaller quotas for a number of wild traditional groundfish species, the ample supply from farmed sources of ready substitutes prevent prices from rising beyond certain levels.

Tuna's share of total fish exports in 2006 was 8 percent. Large fluctuations in catch levels have caused instability in markets, with rising oil prices hurting fleet operators and canneries. Japan, the largest market for imported tuna, saw falling volumes in all categories. Import tariffs on tuna continue to be an important issue for both importers and exporters, including the impact of preferential access for products from specific countries.

Salmon's share in world trade has increased strongly over the last decades to the present 11 percent. This is mainly due to salmon and trout aquaculture in Northern Europe and in North and South America, which have increased the farmed share of production to about 60 percent. Prices have been oscillating in line with sudden shifts in supply, reaching record levels in 2006 but returning to more normal levels in 2007 and 2008. Industry concentration is enabling producers to benefit from economics of scale, in particular for the cost of feed, although some of the larger companies have also been affected by disease problems. Demand for farmed salmon is firm, increasing steadily year by year, with new markets opening up in both developed, transiton and developing countries. The increase in demand for farmed salmon is facilitated by the expansion of modern retail channels and steady availability of product throughout the year. In Russia, for example, the modernization of its food distribution system, with large supermarkets now present in all major urban areas, explains in part the rapid rise in Russia's salmon imports, as well as of other imported fish products.

The share of cephalopods in world fish trade was 4.2 percent in 2006. Thailand is the largest exporter of squid and cuttlefish, followed by Spain, China and Argentina. Morocco is the principal octopus exporter followed by Spain. Spain, Italy and Japan are the largest importers of the commodity. Total annual catches of cephalopods are fairly stable at around 3.6 - 3.8 million tonnes, although the composition among the three main species groups and prices may show significant variations from year to year.

The production of fishmeal over the last decades has been remarkably stable at around 6 million tonnes, with annual levels between 5 and 7 million tonnes, depending on catch levels in South America. A significant reduction in Peruvian catches in 2006 led to sharply higher fishmeal prices in 2006 and 2007. Of note is the large share of fishmeal now consumed by the aquaculture industry, estimated at 60 percent, with strong demand in particular in Asia and China. At the same time, the poultry industry has drastically reduced its fishmeal use.

For fish oil, the role of aquaculture is even greater than for fishmeal, with close to 85 percent of production consumed by the sector and with salmonids responsible for more than 55 percent of the sector's share. Annual production is fairly stable at close to one million tonnes. Concern about long-term feed requirements from a growing aquaculture sector, has stimulated development of new feed formulations with a reduced content of fishmeal and oil and increased vegetable content.

In light of the general rise in commodity prices over the last few years, there is a growing focus on the need for representative price indices for the fisheries sector in order to reflect price developments within the sector, but also to allow comparisons with other food producing sectors. FAO has therefore formulated a project in which indices will be constructed to reflect price changes within major trade flows of product. These will include products and species originating from developing countries, with a particular focus on farmed species.

RECENT DEVELOPMENTS IN MULTILATERAL AND BILATERAL TRADE AGREEMENTS WITH REGARD TO FISHERY PRODUCTS

The negotiations of the WTO Doha Development Agenda (DDA) carried on throughout 2006 and 2007. The two major issues of relevance to the fisheries sector continue to be 1) fisheries subsidies discussed in the Negotiating Group on Rules, and 2) market access, discussed in the Negotiating Group on Non-Agricultural Market Access.

In late 2007, a draft text on fisheries subsidies was presented by the chairman of the Negotiating Group on Rules. The proposed text, which is currently being discussed by WTO Members, contains several references to a potential peer review role for FAO.

On market access, draft texts were presented in both 2007 and early 2008. Although the general agreement is towards further liberalization of trade and reduced import tariffs on imported products, including fish and fishery products, several issues still remain to be settled. These include the exact reduction of existing import tariffs, with exceptions for developing countries in general and for Least Developed Countries and Small Vulnerable Economies in particular. The erosion of preferences for specific countries and how to mitigate the impact on their economies through possible compensatory measures, continues to be an unresolved issue. In the draft text, provisions are also included in which countries with a low-binding coverage of non-agricultural tariff lines will increase these substantially after the entry into effect of the DDA.

After the accession of China to the WTO in 2001 and Viet Nam in 2007, all major fish producing, importing and exporting countries have become members of the organization, with the exception of the Russian Federation. The latter is a WTO observer and is in the midst of access

negotiations, with the aim to become full member within this decade. Membership of the organization is a pre-requisite for having access to its Dispute Settlement Mechanism. Countries whose accession is expected to be ratified in 2008 are Cape Verde and the Ukraine.

Parallel to the increase of the WTO membership, a number of bilateral trade agreements with strong relevance to fish trade have entered into force. The full impact and long-term effect of such bilateral agreements and regional trade agreements, in addition to or in substitution of broader multilateral agreements remains to be seen, but is the object of study by the FAO in cooperation with other organizations.

One trade agreement of significant relevance for trade in fish and fishery products is the one negotiated at the regional level between six[3] ACP regions and the EU, with the aim to arrive at regional Economic Partnership Agreements (EPAs) and make them operational from January 2008. The deadline was important, as the waiver granted by the WTO to the preferences in the Cotonou agreement, expired end of 2007.

At the end of the deadline only one region, the Caribbean, had concluded a full EPA with the EU. Whereas LDCs from all regions can continue to benefit from free market access preferences to the EU market under the EBA agreement, this is not the case for non-LDCs. Many of these have therefore entered into interim agreements with the EU. In total, 35 ACP countries had entered into full or interim agreements by the end of 2007. Some of these agreements also inlcude chapters on fisheries development and cooperation. Countries that are neither LDCs nor signatories of interim or full agreements can continue to export to the EU market under the EU's General System of Preferences (GSP). However, this will lead to higher import duties for their products from 2008 onwards.

[3] West Africa, Central Africa, Eastern and Southern Africa, the Southern African Development Community, Caribbean, Pacific